



Mobile Tools for Autism & Communicative Disorders Therapy

WiSys: T120009US01

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Overview

Autism is the fastest growing developmental disability in the United States. Currently the Center for Disease Control estimates that roughly one percent, or 1 in 88 children and 1 in 54 boys between the ages of 3-17 have an autism spectrum disorder. Scientific research has proven intense applied behavioral analysis (ABA) therapy is effective in treating children who are stricken with the disease. Additionally, the trend is toward early intervention in the progression of the disorder which is seen as providing significant help to large numbers (approximately 20-40% of children on the spectrum).

In addition to ABA therapeutic interventions, there are a growing number of biomedical interventions often overseen by Defeat Autism Now (DAN) medical doctors. Often these treatments deal with issues such as dietary changes, allergen control, and immune-system support. Like ABA therapy, each biomedical approach is tailored to the individual child and their unique situation. Currently, however, there are few sophisticated tools for charting patterns of treatment which would allow for enhanced interventions as well as collaborations between ABA and biomedical approaches.

The Invention

A Researcher at University of Wisconsin Stevens Point has developed a suite of medically secure mobile application tools to instantly communicate, track and analyze behaviors and medical interventions for a variety of communication spectrum disorders, especially focusing on Autism therapies. In addition, this system is designed to increase the ability of organizations to train new therapeutic staff in the field through calculated suggestions from an artificial intelligence engine. The suite of apps consists of 1) a data entry, tracking and analysis tool 2) a video capture, sharing and behavior tagging tool, and 3) an artificial intelligence tool. An online Knowledge Automation Expert System (a type of Artificial Intelligence software) is used to track treatment, look for patterns in said treatment, and provide guidance on the next best steps based on each child's needs. The applications are media rich and allow parents, therapists, and medical doctors to record, track, and observe actual behavior in real time through interactive charting, video sharing, and video conferencing. The video sharing and conferencing provide a way for therapists in the field to work in real-time with senior therapists remotely, thus increasing the level of training for field staff.

These apps are cross mobile platform compatible (Android, iOS and Blackberry) and have several levels of security ensuring patient record safety. This streamlined system of apps work together to capture all critical data from the medical treatments as well as the behavior therapy treatments and provide analysis tools to track and understand changes in the pattern of behavior and reduce subjective interpretation. The final product simplifies communication among parents, therapists and doctors, as well as providing an easy method for therapeutic organizations to efficiently train their staff in the field through direct access to senior therapists and their experience.

Applications

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Key Benefits

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- Track and enhance biomedical and therapeutic interventions
- Capture implicit knowledge of senior Autism therapists in knowledge automation expert engine to make their expertise more available to line therapists in the field for better training
- Look for patterns in these interventions to improve treatment
- Facilitate collaboration between ABA therapists, DAN/medical doctors and parents in the treatment of children on the spectrum
- Simplifies communication between parents, behavior therapists and medical doctors
- Increases inter-operator reliability
- Provides method to analyze data from all sources and analyze trends and changes
- Highly secure system for patient medical record safety

Stage of Development

Integrated applications for data entry, tracking and video capture are developed. The application including the AI engine is partly developed and requires input from licensee for completion.

Tech Fields

- [Education & Training : Medical & health](#)
- [Information Technology : Computing methods, software & machine learning](#)

For current licensing status, please contact Tony Hanson at thanson@wisys.org or (608) 316-4013

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